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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/608,830	06/26/2003	Himansu M. Gajiwala	2507-5300.IUS (21870-US-0)	7592
60794	7590	03/14/2007	EXAMINER	
TRASKBRITT, P.C./ ALLIANT TECH SYSTEMS P.O. BOX 2550 SALT LAKE CITY, UT 84110			RONESI, VICKEY M	
			ART UNIT	PAPER NUMBER
			1714	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		03/14/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/608,830	GAJIWALA, HIMANSU M.
	<b>Examiner</b>	<b>Art Unit</b>
	Vickey Ronesi	1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 12 December 2006.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 7,14 and 20-24 is/are pending in the application.
- 4a) Of the above claim(s) 21 and 22 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 7,14,20,23 and 24 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/12/06</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application |
|   | 6) <input type="checkbox"/> Other: _____.                         |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/12/2006 has been entered.
2. All outstanding rejections are withdrawn in light of applicant's amendment filed on 12/12/2006.
3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior office action.

### ***Election/Restrictions***

4. Newly submitted claims 21 and 22 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: the insulation material of new claims 21 and 22 and the rocket motor of claims 7, 14, 20, 23, and 24 are related as mutually exclusive species in an intermediate-final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product (MPEP § 806.04(b), 3rd paragraph), and the species are patentably distinct (MPEP § 806.04(h)). In the instant case, the intermediate product is deemed to be useful in routine rubber applications including hoses, gaskets, cushions, etc (see paragraph 0037 of applicant's specification) and the inventions are deemed patentably distinct since there is nothing on this

record to show them to be obvious variants. Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions anticipated by the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 21 and 22 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

***Claim Rejections - 35 USC § 112***

5. Claims 7, 14, 20, 23, and 24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

With respect to claims 7 and 14, the generic term “curing agent” fails to satisfy the written description requirement of 35 USC 112, first paragraph since there does not appear to be a written description requirement of the generic term “curing agent” in the application as originally filed, *In re Wright*, 866 F.2d 422, 9 USPQ2d 1649 (Fed. Cir. 1989) and MPEP 2163. The examiner has not found any support for this generic term in the specification as originally

filed. While there is support for sulfur which behaves as a curing agent in Table 1 on page 10 in Table 8 page 19 of the specification, there is no support for the generic term "curing agent" which encompasses a curing agent other than sulfur.

With respect to claims 7 and 14, the terms "silica" and "ammonium polyphosphate" representative of HI-SIL® 532 EP and HI-SIL® 233 and PHOS-CHECK® P-30 are too broad in order to be properly supported by the trademarked terms and thus fail to satisfy the written description requirement of 35 USC 112, first paragraph since there does not appear to be a written description requirement of the generic term "curing agent" in the application as originally filed, *In re Wright*, 866 F.2d 422, 9 USPQ2d 1649 (Fed. Cir. 1989) and MPEP 2163.

With respect to claims 23 and 24, the term "carbon black" fails to satisfy the written description requirement of 35 USC 112, first paragraph since there does not appear to be a written description requirement of the generic term "carbon black" in any amount in the application as originally filed, *In re Wright*, 866 F.2d 422, 9 USPQ2d 1649 (Fed. Cir. 1989) and MPEP 2163. In the specification as originally filed, the only reference to carbon black N-330® is in Tables 1 and 8 on pages 10 and 19, respectively, where N-330® is present in an amount of 1.00 part. This is insufficient to support claim language with generic carbon black in any amount.

With respect to claim 20, it is rejected for being dependent on a rejected claim.

***Claim Rejections - 35 USC § 103***

6. Claims 7, 14, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herring '841 (US 4,501,841) in view of Trask et al (US 4,726,987) and Namura et al (US 5,952,089).

Herring '841 discloses elastomeric insulating materials for rocket motors (col. 2, lines 35-37) comprising crosslinkable elastomeric polymers such as EPDM (col. 3, lines 28-32); polyaramide pulp, i.e., polymeric organic filler, which is used to advantageously promote the formation of a strong, adherent char during propellant burning (col. 2, lines 38-48); organic and inorganic flame retardants (col. 4, lines 1-14); and a peroxy crosslinking agent (see Table C in col. 5). Method of insulating rocket motors is provided in col. 6, lines 33-58. While Herring '841 does not teach cure accelerator or cure activator, it is considered that these additives are quite common in crosslinking and would be suitably utilized by one of ordinary skill in the art.

Herring '841 fails to disclose the presently claimed organic filler or ammonium polyphosphate as the inorganic flame retardant.

With respect to the organic fillers, Herring '841 does not explicitly disclose any other polymeric filler as a char-former but it does not exclude the substitution or the additional use of other similar materials.

Trask et al discloses a fire-retardant article and teaches about the benefits of a variety of polymeric fibers for use in fire-retardant articles. In particular, Trask et al teaches that a aramid fibers like utilized by Herring are advantageous for char formations that act as a thermal barrier (col. 2, lines 19-22) and that polyphenylene sulfide is also a char former with outstanding chemical resistance, thermal stability, and fire resistance like the polyimides (col. 2, line 61 to

col. 3, line 2) and that halogenated polymers like polyvinylchloride are advantageous in fire-retardant applications due to its two-stage degradative process (col. 3, lines 18-28).

Given that polyphenylene sulfide and polyvinylchloride are advantageously used with or as substitutes for a char-former such as polyaramide fibers as taught by Trask et al, it would have been obvious to one of ordinary skill in the art to utilize a polyphenylene sulfide or polyvinylchloride as a char-former in the rocket motor insulation of Herring '841. Case law holds that the mere substitution of an equivalent (something equal in value or meaning, as taught by analogous prior art) is not an act of invention; where equivalency is known to the prior art, the substitution of one equivalent for another is not patentable. See *In re Ruff* 118 USPQ 343 (CCPA 1958).

With respect to ammonium polyphosphate, Herring '841 discloses the use of inorganic flame retardants such as antimony oxide and hydrated alumina and is open to the use of other flame retardants not explicitly disclosed.

Namura et al discloses a composition for use in heat insulation and teaches that suitable flame retardants include those taught by Herring '841 such as aluminum hydroxide and antimony oxide and ammonium polyphosphate (col. 9, lines 30-48).

Given that Herring '841 is open to the use of other flame retardants and further given that Namura et al teaches the use of an inorganic flame retardant such as ammonium polyphosphate as being suitable in insulation materials, it would have been obvious to one of ordinary skill in the art to utilize ammonium polyphosphate as the inorganic flame retardant of Herring '841 in order to obtain comparable flame retardant properties, absent a showing of unexpectedly improved flame retardant with ammonium polyphosphate.

7. Claims 7, 14, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herring '841 (US 4,501,841) in view of Trask et al (US 4,726,987), Namura et al (US 5,952,089), and Herring '431 (US 4,878,431).

The discussion with respect to Herring '841, Trask et al, Hanmura et al in paragraph 6 above is incorporated here by reference.

Neither Herring '841 nor Trask et al teaches the use of an antioxidant, a cure accelerator, a cure activator, a tackifier, or a plasticizer in a rocket motor insulation composition.

Herring '431 discloses elastomeric insulating materials for rocket motors, like Herring '841, and teaches the suitability of tackifiers and plasticizers to enhance the composition (col. 5, lines 47-51). Additionally, like Herring '841, Herring '431 exemplifies the use of a peroxy crosslinking agent with an accelerator (col. 5, line 68) and antioxidants (Table 9 bridging cols. 13 and 14).

Given that Herring '431 discloses the suitability and desirability of tackifiers, plasticizers, accelerators, and antioxidants in rocket motor insulation compositions, it would have been obvious to one of ordinary skill in the art to utilize any of these enhancement-providing additives to the rocket motor insulation composition of Herring '841.

8. Claims 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herring '841 (US 4,501,841) in view of Trask et al (US 4,726,987), Namura et al (US 5,952,089), and Graham et al (US 5,821,284).

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The discussion with respect to Herring '841, Trask et al, Hanmura et al in paragraph 6 above is incorporated here by reference.

Herring '841 discloses the use of hydrated silica as a filler in amounts of 10-30 wt % (col. 3, lines 53-67; col. 5, line 22), however, it does not disclose carbon black.

Graham et al discloses an insulation material for rocket motors comprising EPDM and teaches that 18-20 wt % hydrated silica or ½ wt % carbon black is used as a filler (col. 8, lines 3-4).

Given that Herring '841 teaches the use of hydrated silica and further given that Graham et al teaches that the use of hydrated silica and carbon black are used interchangeably in insulation material for rocket motors, it would have been obvious to one of ordinary skill in the art to substitute silica for carbon black in the composition of Herring '841. Case law holds that the mere substitution of an equivalent (something equal in value or meaning, as taught by analogous prior art) is not an act of invention; where equivalency is known to the prior art, the substitution of one equivalent for another is not patentable. See *In re Ruff* 118 USPQ 343 (CCPA 1958).

#### *Response to Arguments*

9. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vickey Ronesi whose telephone number is (571) 272-2701. The examiner can normally be reached on Monday - Friday, 8:30 a.m. - 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

3/12/2007  
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